

### Amendments to the Specification:

Please replace the paragraph beginning on page 2, line 3, with the following amended paragraph:

This object is achieved in that the piezoelectric actuator comprises a piezoelectric layer that is on opposite surfaces provided with a second and a third electrode respectively. The second electrode of the actuator faces the substrate, while the third electrode constitutes an input electrode of the MEMS element, so that a current path ~~between~~ through the MEMS element comprises the piezoelectric layer and the tunable gap.

Please replace the paragraph beginning on page 4, line 32, with the following amended paragraph:

In a preferred embodiment of the method of the invention, the piezoelectric layer is a ~~perowskit~~-perovskite material. Examples hereof are materials from the family of lead-titanate-zirconate (PZT), including  $\text{PbZrTiO}_3$ ,  $\text{Pb}(\text{X}_{0.33}\text{Nb}_{0.67})\text{O}_3\text{-PbTiO}_3$ , with  $\text{X}=\text{Mg}$ ,  $\text{Zn}$ ,  $\text{Ni}$ , or other,  $\text{Pb}(\text{Y}_{0.5}\text{Nb}_5)\text{O}_3\text{-PbTiO}_3$ , with  $\text{Y}=\text{Sc}$ ,  $\text{Mn}$ ,  $\text{In}$ ,  $\text{Y}$ , or other, which materials may be doped with a metal such as  $\text{La}$ ,  $\text{Mn}$ ,  $\text{W}$ ,  $\text{Fe}$ ,  $\text{Sb}$ ,  $\text{Sr}$  and  $\text{Ni}$ . These materials are preferred in view of their good processability through sol-gel precursors with relatively moderate sintering temperatures of  $800^\circ\text{C}$  or less, and their controllable microstructure, also if processed at large substrates of a diameter of 6" or even more. Other ~~perowskite~~-perovskite materials that can be used include for instance  $\text{Sr}_3\text{TaGa}_3\text{Si}_2\text{O}_{14}$ ;  $\text{K}(\text{Sr}_{1-x}\text{Ba}_x)_2\text{Nb}_5\text{O}_{15}$ , where  $(0 \leq x \leq 1)$ ;  $\text{Na}(\text{Sr}_{1-x}\text{Ba}_x)_2\text{Nb}_5\text{O}_{15}$ , where  $(0 \leq x \leq 1)$ ;  $\text{BaTiO}_3$ ;  $(\text{K}_{1-x}\text{Na}_x)\text{NbO}_3$ , where  $(0 \leq x \leq 1)$ ;  $(\text{Bi}, \text{Na}, \text{K}, \text{Pb}, \text{Ba})\text{TiO}_3$ ;  $(\text{Bi}, \text{Na})\text{TiO}_3$ ;  $\text{Bi}_7\text{Ti}_4\text{NbO}_{21}$ ;  $(\text{K}_{1-x}\text{Na}_x)\text{NbO}_3\text{-(Bi, Na, K, Pb, Ba)TiO}_3$ , where  $(0 \leq x \leq 1)$ ;  $a(\text{Bi}_x\text{Na}_{1-x})\text{TiO}_3\text{-b(KNbO}_{3-c})1/2(\text{Bi}_2\text{O}_3\text{-Sc}_2\text{O}_3)$ , where  $(0 \leq x \leq 1)$  and  $(a+b+c=1)$ ;  $(\text{Ba}_a\text{Sr}_b\text{Ca}_c)\text{Ti}_x\text{Zr}_{1-x}\text{O}_3$ , where  $(0 \leq x \leq 1)$  and  $(a+b+c=1)$ ;  $(\text{Ba}_a\text{Sr}_b\text{La}_c)\text{Bi}_4\text{Ti}_4\text{O}_{15}$ , where  $(a+b+c=1)$ ;  $\text{Bi}_4\text{Ti}_3\text{O}_{12}$ ;  $\text{LiNbO}_3$ ;  $\text{La}_3\text{Ga}_{5.5}\text{Nb}_{0.5}\text{O}_{14}$ ;  $\text{La}_3\text{Ga}_5\text{SiO}_{14}$ ;  $\text{La}_3\text{Ga}_{5.5}\text{Ta}_{0.5}\text{O}_{14}$ ;  $\text{AlN}$ ;  $\text{ZnO}$ .

Please replace the paragraph beginning on page 6, line 4, with the following amended paragraph:

The movable element 40 is used as the actuator and is provided with a piezoelectric layer 25, a second electrode 21 and a third electrode 22. It is supported mechanically through a support 38, that is present on the substrate 30. The ~~device 100~~ MEMS element 101 further comprises a first electrode 31 on the substrate 30. Although not shown, there may be further electrodes in the movable element, such that the second electrode does not contribute substantially to the actuation. On application of a driving voltage to the actuator 40, e.g. between the second and the third electrode 21, 22, the movable element is movable towards and/or away from the first electrode 31. There are different options of moving the beam-shaped piezoelectric element. Generally, the movable element will be moved towards the first electrode 31 on application of a driving voltage, and will relax to its position away from the substrate 30 after removal of the driving voltage.

Please replace the paragraph beginning on page 7, line 10, with the following amended paragraph:

The capacitor operates in the following manner: on application of an actuation voltage the movable element 40 will ~~bent~~ bend towards the substrate 30. Then the piezoelectric layer 25 will come into contact with the first electrode 31. The resulting capacitor essentially consists then of the third electrode 22, the piezoelectric layer 25 and the first electrode 31.

Please insert the following paragraph immediately before the paragraph beginning on page 7, line 20:

In some embodiments, a fourth electrode 60 is present on the substrate 30 surface, that contacts the second electrode 21, when the movable element 40 is in its second, closed position. In this embodiment, the MEMS element 101 is such provided with two

outputs that are connected to the input simultaneously. Particularly, these are two capacitors connected in parallel so as to increase the maximum capacitance of the MEMS element 101.

Please replace the abstract with the following amended abstract on the following page:

The microelectromechanical system (MEMS) element (101) comprises a first electrode ~~(310)~~ (31) that is present on a surface of substrate (30) and a movable element (40). This overlies at least partially the first electrode (31) and comprises a piezoelectric actuator, which movable element (40) is movable towards and from the substrate (30) by application of an actuation voltage between a first and a second position, in which first position it is separated from the substrate (30) by a gap. Herein the piezoelectric actuator comprises a piezoelectric layer (25) that is on opposite surfaces provided with a second and a third electrode (21,22) respectively, said second electrode (21) facing the substrate (30) and said third electrode (22) forming an input electrode of the MEMS element (101), so that a current path ~~between~~ through the MEMS element (101) comprises the piezoelectric layer (25) and the tunable gap.